

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/RU2004/000238	International filing date (<i>day/month/year</i>) 12.07.2004	Priority date (<i>day/month/year</i>) 20.11.2003
International Patent Classification (IPC) or national classification and IPC F04F5/54, E21B47/12		
Applicant KHOMYNETS, Zinoviy Dmitrievich		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of _____ sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/RU	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																					
1. Statement	<table><tbody><tr><td rowspan="2">Novelty (N)</td><td>Claims</td><td>1-4</td><td>YES</td></tr><tr><td>Claims</td><td></td><td>NO</td></tr><tr><td rowspan="2">Inventive step (IS)</td><td>Claims</td><td>1-4</td><td>YES</td></tr><tr><td>Claims</td><td></td><td>NO</td></tr><tr><td rowspan="2">Industrial applicability (IA)</td><td>Claims</td><td>1-4</td><td>YES</td></tr><tr><td>Claims</td><td></td><td>NO</td></tr></tbody></table>	Novelty (N)	Claims	1-4	YES	Claims		NO	Inventive step (IS)	Claims	1-4	YES	Claims		NO	Industrial applicability (IA)	Claims	1-4	YES	Claims		NO
Novelty (N)	Claims		1-4	YES																		
	Claims		NO																			
Inventive step (IS)	Claims	1-4	YES																			
	Claims		NO																			
Industrial applicability (IA)	Claims	1-4	YES																			
	Claims		NO																			
2. Citations and explanations (Rule 70.7)	<p>Reference is made to the following documents cited in the search report:</p> <p>D1: RU 2121610 C1 D2: RU 2089755 C1 D3: RU 2059891 C1 D4: US 4744730 A D5: US 4293283 A</p> <p>D1, which is the closest prior art to the claimed invention, discloses a plant which comprises, mounted on a casing string: a packer with a central channel, and a jet pump with an active nozzle, a mixing chamber, and a through channel with a resting place for mounting a sealing assembly with an axial channel. Furthermore, the plant is equipped with a logging device, situated in the under-packer area, on the side where the medium pumped out of the well enters the jet pump, and mounted on the logging cable, which passes through the axial channel of the sealing unit. The jet pump outlet is connected to the space surrounding the pipe string. The inlet of the jet pump channel supplying the medium to be pumped out is connected</p>																					

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>to the inner cavity of the pipe string below the sealing unit, and the inlet of the channel feeding a liquid working medium into the active nozzle is connected to the inner cavity of the pipe string above the sealing unit.</p> <p>The method for operating a well jet pump known from D1 includes mounting a jet pump with through channel and a packer on a casing string, lowering this assembly into the well, unpacking the packer, and creating the required depression in the under-packer area by pumping liquid medium out of the under-packer area using the jet pump.</p> <p>The claimed plant differs from the plant known from D1 in that it has no packer, and comprises, mounted on the capital string on the lower section thereof, a ring for mounting a sealing unit, and a smooth pipe string with a jet pump. In the pump housing is embodied a stepped through channel, in which it is possible to mount a blocking insert, which closes the active medium supply channel, or a depression insert, which closes the pipe cross-section of the pipe string. On the lower end of the pipe string is a logging device, between the latter and the jet pump on the pipe string is a sealing unit fitted axially displaceable, and the lower section of the pipe string above the logging device is embodied perforated.</p> <p>The claimed method differs from D1 in that, as the plant is lowered, the logging device is used to record the background values of the physical parameters of the productive strata. The sealing unit and the depression insert are then installed,</p>

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	<p>and the liquid working medium is fed along the pipe string into the nozzle of the jet pump. A number of depressions of different size are created in the well below the sealing unit, and the bottom hole pressure is recorded.</p> <p>Then, with the jet pump in operation, the logging device is displaced along the productive strata and the geophysical parameters of the productive strata and the stratum fluid entering the well are recorded.</p> <p>Therefore, claims 1 and 2 meet the requirement of novelty.</p> <p>Said distinctive features make it possible to intensify work to survey, test and prepare wells, primarily wells that are horizontal and of great curvature, while operating a jet pump in combination with a logging device.</p> <p>Documents D2-D5 characterise the background art for the given problem, and do not contain the cited distinctive features, characterising the claimed well jet plant for logging horizontal wells and method for operation thereof. Therefore, the set of claims meets the requirement of inventive step.</p> <p>Furthermore, the claimed plant and method for operation thereof are industrially applicable.</p>